Support for the Amendment

Device claim 2 is amended to clarify that the throttling device that restricts the air flow such that the air flow is low enough to leave the spray cone undisturbed. No new matter has been added. Support for this amendment can be found at, for example, page 3, lines 8-15 and lines 25-30 of the specification.

Method claim 9 is amended to add punctuation to further clarify the claim language. No new matter is added.

Entry of the Amendment is requested. Upon entry, claims 1-9 are pending in this Application.

Remarks

The Office Action of June 10, 2009 includes two rejections to the claims, citing four prior art references, each of which will be discussed in turn.

35 U.S.C. §103(a) rejection over Schoeps et al., Lin and Tusch et al.:

In the Office Action, claims 1-5 and 8-9 stand rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,299,495 to Schoeps et al., U.S. Patent No. 5,040,457 to Lin and U.S. Patent No. 3,788,273 to Tusch et al. This rejection is traversed.

The presently claimed invention is directed at a method and a device that provides an overpressure environment around spray nozzles on a spray beam in order to reduce clogging of the nozzles, and provides the overpressure environment without disturbing the spray pattern created by the nozzles. In order to achieve this, the applicant found that individual covers can be placed around each spray nozzle where each individual cover includes an air conduit for receiving air flow that creates the overpressure environment and includes an opening constructed to not disturb the spray from the nozzle.

Schoeps et al. are directed at a cylinder moistening assembly that includes a screen assembly between each moistening fluid spray nozzle and the cylinder to be moistened and disturbs the spray so that the cylinder receives a "a uniform spray of the moistening fluid." See Schoeps et al. at column 2, lines 51-68. Schoeps et al. state that a "primary advantage of the cylinder moistening assembly of the present invention is its ability to provide a virtually uniform moisture distribution factor per unit of surface area of the cylinder being moistened." See Schoeps et al. at column 3, lines 1-4. Schoeps et al. further characterize the presence of a "screen assembly with a controllable spray outline" to achieve the uniform moisture distribution. See Schoeps et al. at column 3, lines 1-14. In other words, Schoeps et al. provide an assembly that modifies the spray pattern from the nozzles in order to provide a uniform moisture distribution on the cylinder. The ability of the cylinder moistening assembly to provide a uniform moisture distribution on the cylinder is demonstrated by the moisture distribution diagram shown by Schoeps et al. in Figure 7.

The cylinder moistening assembly described by Schoeps et al. includes a plurality of fan spray nozzle devices 7 disposed axially next to each other, a cylinder 2, and a two-piece screen

assembly 15 with upper and lower plates 12 and 13 located between each of the nozzles 11 and the surface of the cylinder 2. See Schoeps et al. at column 4, lines 27-38, and Figure 1. Additionally, the spray 10 of moistening fluid extends in the direction of the cylinder 2 through the nozzle 11 of the fan spray nozzle 7, and the spray 10 "is smoothed by means of the placement of the screen plates 12, 13, which are moveable in the direction of the arrow X in accordance with the amount of water needed, and is evenly distributed in accordance with the alternative use of the outlines 23 to 27, so that the spray 10 leaves the screen plates 12 and 13 as a smoothed and evenly distributed spray 18 and strikes the cylinder 2." See Schoeps et al. at column 5, line 62 through column 6, line 4, and Figure 1.

There are at least three differences between the presently claimed invention and Schoeps et al. A first difference is that Schoeps et al. fails to disclose an air flow supplied to a spray nozzle cover that is low enough not to disturb the spray from the nozzle, as required by independent claims 1 and 2. Specifically, claim 1 provides that "the air flow is low enough to not disturb the spray from the nozzle." Claim 2 specifies that the "throttling device restricts the air flow such that the air flow is low enough to leave the spray cone undisturbed." The Office Action, at page 2, asserts that these limitations are taught at column 3, lines 21-24 and column 4, lines 19-23 and lines 54-59 of Schoeps et al. However, these portions of Schoeps et al. make no mention of the air flow rate beyond the simple statement that the air in the nozzle housing is maintained at a "positive pressure." See Schoeps et al. at column 3, line 24. Further, screen plates 12 and 13 of Schoeps et al. are responsible for forming the spray pattern after the spray has left housing 3. See Schoeps et al. at column 4, lines 54-49. As such, it is reasonable to conclude that the Schoeps et al. is concerned with disturbing the spray pattern through the use of screen plates 12 and 13. Further, it would appear that Schoeps et al. would not be concerned with any affect that the air flow from inlet 17 would have on the nozzle spray at a location in the housing 3 that is upstream of the screen plates 12 and 13 where the final spray pattern is ultimately formed. At least based upon this reasoning, Schoeps et al. fails to provide a teaching or suggestion of an air flow that does not disturb the nozzle, as specified in independent claims 1 and 2.

A second difference between the presently claimed invention and Schoeps et al. is that the presently claimed invention provides a nozzle cover having an opening that does not disturb the spray pattern from the nozzles. Claims 1 and 2 each specify that the "opening is constructed

to not disturb spray from the nozzle." Claim 9 specifies that a spray cone is generated which is "leaves the cover, undisturbed by the cover." In contrast, Schoeps et al. identify as their "primary advantage" the disruption of the spray to create a "uniform moisture distribution on the cylinder." See Schoeps et al. at column 3, lines 1-14, and column 5, lines 38-69 in the context of Figure 7. Further, page 3 of the Office Action concedes that Schoeps et al. do not explicitly teach such an opening.

A third difference is that the presently claimed invention provides a cover that surrounds each spray nozzle, individually, on a spray beam. Claims 1 and 2 specify that each spray nozzle is "surrounded by a separate cover." Claim 9 specifies "a separate cover surrounding each spray nozzle." In contrast, Schoeps et al. do not disclose providing a cover around each spray nozzle individually. The Office Action at page 2 concedes that Schoeps et al. are silent in this respect. In fact, it is clear from the description of Schoeps et al. that they intend their cover to surround a plurality of spray nozzles. The Examiner's attention is directed to Schoeps et al. at column 5, lines 38-59, and Figures 2-6 that shows exemplary two-piece screen assemblies 15 wherein the distance "A" is the distance between adjacent spray nozzles. Clearly, the teaching of Schoeps et al. are for a housing that encompasses a plurality of spray nozzles.

It is additionally noted that Schoeps et al. appear to be directed at an overpressure environment within the housing 3. The Examiner's attention is directed to Schoeps et al. at column 4, lines 54-61. It is submitted that the opening between the screen plates 12 and 13 helps control the overpressure environment within the housing 3. Accordingly, without the screen plates 12 and 13, it is not seen how an overpressure environment can be achieved according to the cylinder moistening assembly described by Schoeps et al.

The outstanding Office Action appears to rely upon Lin for the disclosure of an opening that does not disturb spray from a nozzle. See the outstanding Office Action at page 3 in reference to Lin at column 3, lines 4-19, and Figure 2. It is pointed out, however, that Lin is not concerned with providing an overpressure environment around the nozzles 4. Instead, Lin provide for reducing clogging at the spray nozzle by introducing pressurized air through the narrow orifice 20. See Lin at column 3, lines 31-42 and Figure 2. Accordingly, there is no need by Lin of a cover or screen to create an overpressure environment around the spray nozzle.

Further, Lin does not teach that the cover is designed to leave the spray undisturbed, as is required by the pending claims. Rather, the spray shields 10, 11 of Lin are designed to "confine

the spray from the nozzle." See Lin at column 3, lines 17-19. Clearly, if the spray shields 10, 11 are confining the spray from the nozzle, the spray shields 10, 11 are necessarily disturbing the spray to some degree. It is also noted that, in contrast to the pending claims, the air flow of Lin is not low enough not to disturb the nozzle spray. For example, column 3, lines 31-33 of Lin state that "By mixing air with the dampener solution a more evenly distributed fluid spray pattern is obtained from the spray nozzle." Thus, the air flow of Lin is clearly high enough to disturb or influence the spray such that the pattern is more evenly distributed.

For at least the aforementioned reasons, one having ordinary skill in the art would not have looked to Lin for teaching to modify Schoeps et al. In fact, modifying Schoeps et al. by removing the two-piece screen assembly 15 would go against the teachings of Schoeps et al. of the need for smoothing the spray pattern to provide a uniform moisture distribution on the cylinder. Furthermore, removing the two-piece screen assembly 15 from the device of Schoeps et al. would likely have the effect of removing or, at least, significantly reducing the overpressure environment around the nozzles. Clearly, such a modification of Schoeps et al. would destroy the teachings of Schoeps et al. of providing a uniform moisture distribution on the cylinder and of providing an overpressure environment around the nozzles.

The outstanding Office Action appears to rely upon Tusch et al. for the disclosure of an individual cover that covers a single nozzle. See the outstanding Office Action at page 2 in reference to Figure 10 of Tusch et al. It is pointed out, however, that the disclosure of Tusch et al. is not related to the technical field of the presently pending claims which is the field of printing press spray beams. Instead, Tusch et al. relate to an apparatus for applying paint or the like to a submerged surface, such as that of the hull of a ship, a sea-wall or moored buoys that is normally inaccessible except to a diver. See Tusch et al. at column 1, lines 4-15. Further, there is no teaching or suggestion in Tusch et al. that compressed air, combined with the shield 112 disclosed in Figure 10, would actually function to prevent the nozzle from becoming clogged by the spray itself. Instead, the function of the compressed air and shield 112 of Tusch et al. is designed to keep the interior of the shield 112 purged of water. See column 2, lines 17-20 of Tusch et al. This function is in sharp contrast to the purpose of claimed nozzle cover which is to solve the problem of printing ink mist clogging the nozzles from which the ink was originally discharged. See page 1, lines 15-35 in the pending Application. Accordingly, there is no reason why one having ordinary skill in the art of printing press spray nozzles would have looked to

Tusch et al. to solve the problem of keeping a printing press nozzle clean from the ink mist that the nozzle itself is responsible for forming.

In view of the above comments, one skilled in the art would not have looked to Lin or Tusch et al. to modify Schoeps et al. to achieve the presently claimed invention. Accordingly, withdrawal of the prior art-based rejection over Schoeps et al., Lin and Tusch et al. is requested.

35 U.S.C. §103(a) rejection over Schoeps et al., Lin, Tusch et al. and Marsden:

The outstanding Office Action includes a rejection of claims 6 and 7 under 35 U.S.C. §103(a) over Schoeps et al., Lin, Tusch et al. and U.S. Patent No. 2,448,226 to Marsden. This rejection is traversed.

As discussed above, Schoeps et al. describe a cylinder moistening assembly and are primarily concerned with providing a uniform moisture distribution on the cylinder. In order to provide a uniform moisture distribution on the cylinder, Schoeps et al. require the presence of a two-piece screen assembly 15 that disrupts the spray pattern created by the plurality nozzles. In addition, Schoeps et al. teach the presence of a housing that surrounds multiple spray nozzles. Furthermore, the design of Schoeps et al. provides for an overpressure environment within the housing 3. As a result, it is not a simple matter to remove the two-piece screen assembly 15 taught by Schoeps et al. without also removing or significantly reducing the overpressure environment around the spray nozzles to reduce clogging and also removing the smoothing effect that is taught by Schoeps et al. as their "primary advantage."

In contrast to Schoeps et al., the presently claimed invention provides a device that encloses individual spray nozzles, creates an overpressure environment to reduce clogging of the sprays nozzles, and provides an opening that is constructed to not disturb the spray from the nozzle wherein the air flow does not disturb the spray. As discussed above, Lin would not have suggested modifying Schoeps et al. to achieve the presently claimed invention. Lin is not concerned with providing an overpressure environment around the spray nozzles. Instead, Lin reduces clogging by the use of pressurized air flowing through the orifice 20 which has the effect of disturbing the spray. See Lin at column, lines 31-42, and Figure 2. Furthermore, Lin would not have suggested modifying Schoeps et al. to provide housings around individual nozzles or to remove the two-piece screen assembly. Such modifications would have the effect of destroying

the teachings of Schoeps et al. wherein Schoeps et al. are focused on maintaining a uniform moisture distribution on the cylinder and an overpressure environment within the housing.

Likewise, a person having ordinary skill in the art would not have looked to Tusch et al. to modify Schoeps et al. to provide housings around individual nozzles because Tusch et al. are related to a different technical field: underwater painting. Further, because the compressed air and shield of Tusch et al. operate to purge water out of the spraying area, Tusch et al. do not address the problem of keeping nozzles clean from ink mist generated by the nozzle itself that is solved by the claimed invention.

Marsden fails to cure these defects identified above with respect to Schoeps et al., Lin and Tusch et al. From the outstanding Office Action at page 7, it appears that Marsden is relied upon for teaching a spray valve for a spray nozzle, G, provided with an internal air conduit 45 and an air bore 46 connected to the cover, wherein the air bore has such a diameter that a throttling effect is obtained. See Marsden at column 4, lines 45-62, and Figure 3. It is submitted that this in no way teaches modifying either Schoeps et al or Lin to achieve the presently claimed invention.

In view of the above comments, the claimed invention would not have been obvious from Schoeps et al, Lin, Tusch et al. and Marsden. Accordingly, withdrawal of the rejection is requested.

It is believed that this application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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